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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,807	03/04/2002	Paul A. Christian	08935-255001	1600

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225 FRANKLIN STREET
BOSTON, MA 02110

EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,807

Applicant(s)

CHRISTIAN ET AL.

Examiner

Julian Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2-14-05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 and 66-70 is/are pending in the application.
- 4a) Of the above claim(s) 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 29-40 and 66-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/04, 2/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 14, 2005 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21, 29-40 and 66-70 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the inclusion of water to initiate the oxidation process. The examiner notes that applicant has further defined the claimed invention in reciting that the starting powders are a dry mixture. See page 4 of applicant's specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4- 6, 8, 9, 13, 14, 16, 29, 30, 32- 34, 36- 38 and 66- 70 are rejected under 35

U.S.C. 102(b) as being anticipated by Megahed et al. (U.S. Pat. 3,911,094)

Megahed et al. teaches a primary battery made by preparing nickel oxyhydroxide by combining nickel hydrate, i.e. $\text{Ni}(\text{OH})_2$ or nickel hydroxide, with a hydroxide salt such as potassium hydroxide, *inter alia*. (col. 1 line 65 et seq., col. 2 line 30-62) The dry mixture is then reacted with ozone. (col. 21 line 63 et seq.) No carbon dioxide is present in the atmosphere.

With respect to the claimed capacity loss of the battery, this feature has not been given patentable weight as it fails to further limit or give breadth and scope to the process claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 10, 11, 35, 39 and 40 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Megahed et al.

As to an alpha-nickel hydroxide or beta-nickel hydroxide, *inter alia*, it is argued that nickel hydroxide is either of the alpha or beta form, absent of a showing by applicant that the claimed invention distinguishes over the reference.

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Additionally, for the reasons already of record, it is asserted that the ozonizer will spontaneously decompose ozone to dioxygen and atomic oxygen, absent of a showing by applicant that the claimed invention distinguishes over the reference.

See *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990)

Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as obvious over Megahed et al. in view of Jackovitz et al. (U.S. Pat. 4,481,128).

Claim 17 is rejected under 35 U.S.C. 103(a) as obvious over Megahed et al. in view of Yao et al. (U.S. Pat. 5,759,718)

The teachings of Megahed et al. are discussed above.

Regarding heating prior to or during ozonation, Jackovitz et al., as the heating temperature range is undefined, Jackovitz et al. is relied upon to teach that temperatures from 20°C to 50°C are effective temperatures for ozonation, absent of a showing by applicant that a specific heating temperature range has unexpected results.

With respect to nickel hydroxide oxyhydroxide with cobalt oxyhydroxide, Jackovitz et al. teaches addition of cobalt oxyhydroxide to the ozonated mixture. (col. 4 line 37-53) The skilled artisan would find obvious to include cobalt oxyhydroxide in Megahed et al.'s invention. The motivation for such a modification would be to provide a high performance positive electrode plate (ib.) Additionally, for the reasons set forth in the prior Office action, Yao et al. teaches cobalt oxyhydroxide as an additive. (col. 4 line 45-51) The skilled artisan would find obvious to

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include cobalt oxyhydroxide in Megahed et al.'s invention. The motivation for such a modification would be to form an electroconductive network in the positive electrode. (ib.)

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Megahed et al. in view of Köhler (U.S. Pat. 5,800,947).

As to a spherical shape for the particles, while it is reasonably presumed that the particles in Megahed et al., being in powdered form, are substantially spherical, it would have been obvious to one of ordinary skill in the art to employ spherical particles in order to achieve a high packing density and resulting high capacity per unit volume. (see Köhler et al. at col. 3 line 31 et seq.)

Claims 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Megahed et al. in view of Kodama et al. (JP 2001-202956).

The teachings of Megahed et al. are discussed above.

As to a hydroxide salt such as gold hydroxide, for the reasons already of record Kodama et al. teaches addition of gold, *inter alia*, as a trivalent metal ion to the cathode (par. [0035]) The addition of gold is preferably in hydroxide form. (par. [0022]) As to an oxidation promoting additive of "gold (+3) hydroxide", Kodama et al. teaches that the oxidation evolution potential, i.e. oxidation reaction potential is optimized by the addition of the gold hydroxide within a specified weight ratio. (par. [0024]) The skilled artisan would find obvious to add gold hydroxide as an oxidation promoting additive for reasons such as attaining high charging efficiency and maintaining a high-rate discharge property. (par. [0006])

Claims 20, 21, 31, are rejected under 35 U.S.C. 103(a) as being unpatentable over Megahed et al. in view of Ikoma et al. (U.S. Pat. 5,700,596).

The teachings of Megahed et al. are discussed above.

While Megahed et al. does not explicitly teach a bulk dopant such as cobalt, *inter alia*, Ikoma et al. teaches addition of cobalt or cobalt hydroxide to a nickel hydroxide active material. (col. 4 line 4-23) The skilled artisan would find obvious to modify Megahed et al.'s invention by the addition of cobalt for reasons such as improved utilization of the formed battery. (ib.)

Response to Arguments

Applicant's arguments filed with the present amendment have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

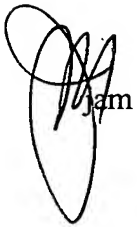
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "Jam", enclosed within a large, loopy oval shape.A small handwritten signature in black ink, appearing to be "PJ", positioned above the printed name.

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER